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Federal Communications Commission

WASHINGTON, D.C. 20554

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APR 21 1994

In the Matter of

Guidelines for Evaluating the
Environmental Effects of
Radiofrequency Radiation

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ET Docket No. 93-62

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

To: The Commission

REPLY COMMENTS OF TRW INC.

TRW Inc. ("TRW"), by its attorneys and pursuant to Section 1.415 of the Commission's rules, hereby submits its Reply Comments in connection with the Commission's notice of proposed rule making in the above-captioned proceeding, Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, 8 FCC Rcd 2849 (1993) ("NPRM").^{1/}

In its Comments, TRW focussed on the ramifications that the Commission's proposals would have for the handsets to be used with TRW's proposed mobile satellite service system called "Odyssey,"^{2/} which would transmit in the

^{1/} The reply comment deadline specified in the NPRM has been extended four times, most recently to April 25, 1994.

^{2/} Odyssey is a trademark of TRW Inc. Odyssey is a satellite telecommunications system which is to be comprised of a constellation of twelve satellites in a medium Earth orbit.

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1610-1626.5 MHz band. TRW urged the Commission not unnecessarily to penalize relatively low-powered consumer devices, and to embrace the concept of user education, in order to provide an appropriate balance between the need to protect the general public from possible health and safety hazards and the ability of equipment makers and service providers to bring economically viable products to the marketplace.

Specifically, TRW stated its belief that the Commission should consider RF exposure from relatively low-power hand-held devices as occurring in a "controlled environment" (as that term is employed in the American National Standards Institute/ Institute of Electrical and Electronic Engineers standards proposed for adoption by the Commission ("1992 ANSI/IEEE standards")). In addition, while TRW supported the Commission's proposal for exclusion of low-power devices, and stated its expectation that the handsets for use with Odyssey will be eligible for exclusion under at least one of the alternative formulations to be adopted, TRW asked for clarification of the definition of the term "radiating structure" and called upon the Commission to require specific absorption rate ("SAR") measurements that are based on unambiguous field strength readings at specific frequencies and distances from the subject device. TRW also supported a requirement that the Commission mandate the measurement and recertification of existing equipment and facilities where new, lower-

emission devices will share spectrum with older, higher-power transmitters, and believed that steps should be taken to standardize the RF measurement process.

Not surprisingly, the comments the Commission received in response to the important subject of how to regulate devices that emit RF radiation reflected a myriad of viewpoints. Some commenters claimed that the proposed regulations are too stringent,^{3/} others supported the proposed regulations in their entirety and urged the Commission to err on the side of caution in implementing them,^{4/} and still others contested the scientific validity of the 1992 ANSI/IEEE standards themselves.^{5/} Given that there is no consensus in the scientific community as to what level of RF exposure is problematic or as to what measures provide adequate protection from the perils that RF radiating devices do pose, TRW reiterates its plea that the Commission attempt as best it can to ensure that radio transmitters do not pose unacceptable health

^{3/} See, e.g., Comments of Telecommunications Industry Association at 18-20 (noting overt conservatism of ANSI/IEEE standards, calling for continuation of current categorical exclusions); Joint Comments of CBS, Inc., et al at 17 (contending that "there is no scientific consensus for concluding that the uncontrolled standard is *necessary* to protect anyone," and that the ANSI/IEEE standard protects to a degree beyond what is supported by current scientific knowledge).

^{4/} See, e.g., Comments of American Telephone & Telegraph Company at 6-7; Comments of Cohen, Dippell and Everist, P.C. at 6.

^{5/} See Comments of The American Radio Relay League, Incorporated at 10-12; Comments of Florida International University at 1-6 and Attachment.

risks to workers and the public, but to do so in a narrowly-tailored way that does not impose unnecessarily rigid conditions that hinder the ability or viability of the operators and users of those radio transmitters.

In these Reply Comments, TRW addresses several subjects that were broached in the comments. First, it notes that several parties opined that whether a particular device should be regulated as causing RF radiation in an uncontrolled environment or a controlled environment should be dependent upon the awareness of the user of that device of the potential for exposure. For example, Electromagnetic Energy Policy Alliance ("EEPA") stated that:

[i]f the use of a hand-held device is not a concomitant of employment but the user is aware of the potential for exposure through education and training (including warning labels and safety information provided in user instructions), . . . exposure of the user should also be considered in the controlled environment and the guidelines for exposure in the controlled environment should apply.^{6/}

This view is consistent with TRW's belief that the Commission's tentative proposal to regulate all hand-held devices under the more restrictive "uncontrolled environment" standard from the 1992 ANSI/IEEE guidelines may be too restrictive. See TRW Comments at 5-10. TRW reiterates that for the handsets that

^{6/} EEPA Comments at 2 (emphasis in original). See also Comments of Northern Telecom, Inc. at 2-3.

would be used with Odyssey, only the user is close enough to the radiation source to be potentially affected by RF radiation -- a fact that negates any danger of exposure to non-users or unaware individuals. Although the handsets for use with Odyssey should be able to comply with the relevant guidelines under average use conditions, a combined program of consumer education and strategic handset design should mitigate any remaining negative effects as to the users themselves.^{7/} For this reason, TRW continues to believe that the handsets for use with Odyssey in the 1610-1626.5 Mhz band should be regulated under the "controlled environment" guidelines for all users.

Next, TRW agrees with the several commenters that supported the extrapolation of the upper limit for any exclusion of low power devices from its current ceiling of 1.5 GHz to a new ceiling of at least the 2 GHz range.^{8/} The availability of a low-power exclusion for devices such as the handsets to be used with Odyssey in the 1610-1626.5 MHz band, and perhaps those to be used with the

^{7/} In this regard, TRW notes with favor the study attached to the comments of McCaw Cellular Communications, Inc. ("McCaw"). In its study, McCaw showed that cellular portable transceivers (operating under extremely conservative assumptions of 600 mW of output power and 30 minutes of direct exposure) would be unlikely to exceed the 1992 ANSI/IEEE guidelines. See McCaw Comments at 15-16 & n.52. In its own comments, TRW showed that average exposures to users from Odyssey handsets -- both in terms of power and duration -- are likely to be considerably less than those analyzed in the McCaw study. See TRW Comments at 3 n.3.

^{8/} See, e.g., Comments of Northern Telecom, Inc. at 3-5; Comments of Spring Cellular Company at 7-9; Comments of AMSC Subsidiary Corp. at 8 n.10.

Personal Communications Services (both terrestrial and satellite-based) in the 1.8-2.2 GHz range will spur the development and acceptance of the new communications services that the Commission is now helping to establish. Moreover, as several commenters have observed, the values incorporated into the 1992 ANSI/IEEE standards are very conservative,^{9/} and do not reflect the fact that cellular transmissions (which are similar in nature to the transmissions to be made over Odyssey) "generally last only a very small fraction of the ANSI/IEEE time-averaging interval, and call durations are decreasing yearly."^{10/}

In short, extending the upper range of frequency bands in which devices are eligible for low power exclusions can be accomplished without jeopardizing public safety in any way.^{11/} In this regard, TRW further supports the proposal of AMSC Subsidiary Corporation that the Commission expand the existing categorical exclusions

^{9/} See, e.g., Comments of GTE Service Corporation at 6; Comments of AMSC Subsidiary Corp. at 10 n.12.

^{10/} See Comments of GTE Service Corp. at 10. See also TRW Comments at 3 & n.3.

^{11/} Of course, the alternative to exclusion of devices based on low power -- exclusions based on SAR -- would remain available regardless of how the Commission treats the extrapolation question. See TRW Comments at 10-12. Several parties echoed TRW's calls for the development of meaningful guidelines for SAR measurement. See, e.g., Comments of Ford Motor Company at 11-12.

for RF devices to include mobile-satellite service terminals subject to blanket licensing under Part 25 of the Commission's rules.^{12/}

Finally, TRW agrees with the numerous parties that called for the Commission to preempt inconsistent state and local regulations of RF radiation.^{13/} Given the complexity of the subject, the developing state of scientific knowledge on the effects of RF radiation, and the wide range of equipment and users that are potentially affected by regulatory efforts in this field, it is imperative that a comprehensive and unified set of regulations must be developed and administered by a single expert source. Makers of products that produce RF radiation should not be made to face the daunting prospect of having to comply with a patchwork quilt of regulatory initiatives that will impose inconsistent burdens that may be unattainable from both a technical and an economic standpoint.

CONCLUSION

In sum, TRW again urges the Commission to modify certain aspects of its regulatory proposals for devices that emit radiofrequency radiation. As shown above and in TRW's Comments, there are steps that can and should be taken to ensure


^{12/} See Comments of AMSC Subsidiary Corp. at 10-11.

^{13/} See, e.g., Comments of Ericsson Corp. at 17-18; Comments of PacTel Corp. at 3-6; Comments of CBS, Inc., et al, at 45-46.

the public safety that do not have the undesirable side effect of unreasonably constricting the operation of hand-held devices (such as the handsets to be used with Odyssey). The Commission should endeavor to arrive at the appropriate balance.

Respectfully submitted,

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